

R E M A R K S

This is in response to the Official Action mailed July 24, 2001. New Claims 14 and 15 have been added. Claims 1, 4-15 are now pending in the application. Claims 1 has been amended as is further discussed below.

Claims 1 and 4-13 have been rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter that fails to satisfy the written description requirement. Accordingly, Claim 1 has been amended to delete the term "diameter" in the phrase "mean particle size diameter". As acknowledged by the Examiner, "mean particle size" is supported throughout the specification. In view of the foregoing, withdrawal of the rejection of Claims 1 and 4-13 under 35 U.S.C. § 112, first paragraph is respectfully requested.

Claims 1 and 4-13 have been rejected under 35 U.S.C. § 112, first paragraph, as indefinite due to the recitation of a "mean particle size diameter". As discussed above, Claim 1 has been amended to delete the term "diameter" in the phrase "mean particle size diameter". In view of the foregoing, withdrawal of the rejection of Claims 1 and 4-13 under 35 U.S.C. § 112, second paragraph is respectfully requested.

Claims 1, 4, and 11-13 have been rejected under 35 U.S.C. § 103(a) as obvious in view of U.S. Patent No. 5,621,021 (Yoshioka et al.). The Examiner acknowledges that Yoshioka does not teach a requirement of a particle size as recited in Claim 1, but takes the position that it would have been obvious to control the particle size of the colorant in view of Yoshioka's disclosure of the consequences of particle size which is "too small" (Official Action, p. 4, line 16) or "too large" (Official Action, p. 5, line 1). The Examiner further states that U.S. Patent No.

5,976,232 (Gore) discloses that a narrow distribution of colorant particles improves the stability of the ink.

However, it is respectfully submitted that Claims 1, 4, and 11-13 are nonobvious and patentable in view of Yoshioka et al. Claim 1 expressly recites a particle size distribution of 2 to 7 μm and wherein particles having a size of not more than 1.8 μm account for not more than 1.6% by weight of said colorant and wherein particles having a size of not less than 7 μm account for not more than 0.5% by weight of said colorant. Yoshioka et al. does not disclose or suggest a size distribution as recited in Claim 1. As a result, the ink compositions of Yoshioka et al. require large amounts of a film-forming resin. For example, Examples 1 and 2 of Yoshioka et al. require 25% by weight of a film-forming resin. In contrast, the ink composition of the present invention achieves excellent erasability with a relatively small amount of a film-forming resin because colorants of a specific particle size distribution are employed in the ink composition. This is clearly shown in Example 4, where the ink composition is shown to have an excellent erasability of 70.3 with an amount of a film-forming resin of 20% by weight. The erasability of Example 4 is clearly superior to the erasability achieved with a colorant wherein the particle size distribution is not within the range recited in Claim 1. In particular, as shown under the accompanying Declaration under 37 C.F.R. § 1.132 ("132 Declaration") by the inventor, the erasability achieved with a colorant wherein the particle size distribution is not within the range recited in Claim 1 is only 58.2. On the other hand, as also shown in the 132 Declaration, the erasability achieved using the same amount of film-forming resin, i.e. 20% by weight, but with a colorant wherein the particle size distribution is within the range recited in Claim 1 is 71.2. These results would be unexpected and surprising to a person of ordinary skill in the art based on

PATENT

the teachings of Yoshioka et al. or of Gore. Accordingly, it is respectfully submitted that Claim 1 (and all the claims ultimately dependent thereon) is not obvious in view of Yoshioka et al. or of Gore. In view of the foregoing, withdrawal of the rejection of Claims 1, 4, and 11-13 under 35 U.S.C. § 103(a) as obvious in view of Yoshioka et al. is respectfully requested.

Claims 5-8 have been rejected under 35 U.S.C. § 103(a) as obvious in view of Yoshioka et al. as applied to Claims 1, 4, and 11-13, and further in view of either U.S. Patent No. 4,471,079 (Enami) or U.S. Patent No. 5,977,211 (Koyama). The Examiner's position is that it would have been obvious to combine the teachings of Yoshioka et al. with the water-soluble polymer taught by Enami or Koyama to obtain the present invention.

However, it is respectfully submitted that Claims 5-8 are nonobvious and patentable in view of Yoshioka et al. as applied to Claims 1, 4, and 11-13, and further in view of either Enami or Koyama. As discussed above, Yoshioka et al. does not disclose or suggest a size distribution as recited in Claim 1. As a result, as discussed above, the ink compositions of Yoshioka et al. require large amounts of a film-forming resin. Similarly, the ink compositions of Koyama require large amounts of a film-forming resin, as shown in Examples 1-6 of Koyama, which teach the use of 25.2 – 36 % by weight of the resin. Therefore, it would not have been obvious to obtain the present invention, which achieves excellent erasability with only 20% by weight of film-forming resin (*see Example 4 and 132 Declaration*), by combining the teachings of Koyama and of Yoshioka et al. Enami uses dyes as a colorant (*see, e.g., Claim 1 of Enami*). It is clear that the particle size of the dyes of Enami is under 2 μm . Therefore, it would not have been obvious to obtain the present invention, which achieves excellent erasability with a particle size between 2 and 7 μm (*see Example 4 and 132 Declaration*), by combining the teachings of

PATENT

Enami and of Yoshioka et al. Accordingly, it is respectfully submitted that Claim 1 (and claims 5-8 ultimately dependent thereon) is not obvious in view of Yoshioka et al. as applied to Claims 1, 4, and 11-13, and further in view of either Enami or Koyama. In view of the foregoing, withdrawal of the rejection of Claims 5-8 under 35 U.S.C. § 103(a) as obvious in view of Yoshioka et al. as applied to Claims 1, 4, and 11-13, and further in view of either Enami or Koyama is respectfully requested.

Claims 1, 4, 9-11, and 13 have been rejected under 35 U.S.C. § 103(a) as obvious in view of U.S. Patent No. 5,120,359 (Uzukawa et al.) in combination with Yoshioka et al. The Examiner's position is that it would have been obvious to control the particle size of Uzukawa et al. in light of the teachings of Yoshioka et al. to obtain the present invention. The Examiner further states that U.S. Patent No. 5,976,232 (Gore) discloses that a narrow distribution of colorant particles improves the stability of the ink.

However, it is respectfully submitted that Claims 1, 4, 9-11, and 13 are nonobvious and patentable in view of Uzukawa et al. in combination with Yoshioka et al. Neither Uzukawa et al. nor Yoshioka et al. disclose or suggest a size distribution as recited in Claim 1. As a result, as discussed above, the ink compositions of Yoshioka et al. require large amounts of a film-forming resin. Similarly, the ink compositions of Uzukawa et al. require large amounts of a film-forming resin, as shown in Examples 1-9 of Uzukawa et al., which teach the use of 25.6 – 36 % by weight of the resin. Therefore, it would not have been obvious to obtain the present invention, which achieves excellent erasability with only 20% by weight of film-forming resin (*see Example 4 and 132 Declaration*), in view of the teachings of Uzukawa et al. in combination with Yoshioka et al., or in view of Gore. Accordingly, it is respectfully submitted

that Claim 1 (and all the claims ultimately dependent thereon) is not obvious in view of Uzukawa et al. in combination with Yoshioka et al., or in view of Gore. In view of the foregoing, withdrawal of the rejection under 35 U.S.C. § 103(a) of Claims 1, 4, 9-11, and 13 as obvious in view of Uzukawa et al. in combination with Yoshioka et al. is respectfully requested.

Claims 5-8 have been rejected under 35 U.S.C. § 103(a) as obvious in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama. The Examiner's position is that it would have been obvious to combine the teachings of Yoshioka et al. with the water-soluble polymer taught by Enami or Koyama to obtain the present invention.

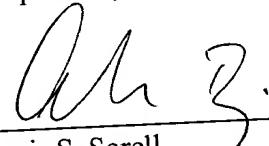
However, it is respectfully submitted that Claims 5-8 are nonobvious and patentable in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama. As discussed above, neither Uzukawa et al. nor Yoshioka et al. disclose or suggest a size distribution as recited in Claim 1. As a result, as discussed above, the ink compositions of Uzukawa et al. and Yoshioka et al. require large amounts of a film-forming resin. Similarly, as discussed above, the ink compositions of Koyama require large amounts of a film-forming resin, as shown in Examples 1-6 of Koyama, which teach the use of 25.2 – 36 % by weight of the resin. Therefore, it would not have been obvious to obtain the present invention, which achieves excellent erasability with only 20% by weight of film-forming resin (*see* Example 4 and 132 Declaration), by combining the teachings of Uzukawa et al., Yoshioka et al., and Koyama. Enami uses dyes as a colorant (*see, e.g.*, Claim 1 of Enami). It is clear that the particle size of the dyes of Enami is under 2 μm . Therefore, it would not have been obvious to obtain the present invention, which achieves

excellent erasability with a particle size between 2 and 7 μm (see Example 4 and 132 Declaration), by combining the teachings of Uzukawa et al., Yoshioka et al., and Enami. Accordingly, it is respectfully submitted that Claim 1 (and claims 5-8 ultimately dependent thereon) is not obvious in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama. In view of the foregoing, withdrawal of the rejection of Claims 5-8 under 35 U.S.C. § 103(a) as obvious in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

In view of the foregoing amendments and remarks, allowance of all claims in the application is respectfully requested.

Respectfully submitted,



Louis S. Sorell
Patent Office Reg. No. 32,439

Attorney for Applicant

Andrea Dorigo
Patent Office Reg. No. 47,532

Agent for Applicant
(212) 408-2620

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claim 1 has been amended as follows:

1. (Twice Amended) An erasable aqueous ink composition comprising at least one colorant and at least one film-forming resin, wherein said colorant has a mean particle size [diameter] of 2 to 7 μm and wherein particles having a size of not more than 1.8 μm account for not more than 1.6% by weight of said colorant and wherein particles having a size of not less than 7 μm account for not more than 0.5% by weight of said colorant.

New Claims 14 and 15 have been added.